

CLAIMS

What is claimed is:

1 1. A method of receiving voice comprising:
2 receiving at least an initial portion of speech packets at a transmission rate
3 exceeding a speech encoding rate;
4 decoding the speech packets at a rate exceeding the speech encoding rate;
5 and
6 processing the decoded speech packets to generate speech signals
7 representative of the initial portion of speech packets, the speech signals having a
8 shortened time period which at least in part compensates for a channel
9 reallocation delay.

1 2. The method of claim 1 wherein processing includes processing the
2 decoded speech packets at a processing rate which initially exceeds the speech
3 encoding rate, and decreasing the processing rate gradually to approximately the
4 speech encoding rate.

1 3. The method of claim 1 further comprising buffering the decoded speech
2 packets in a buffer, and wherein processing includes retrieving the decoded
3 speech packets from the buffer at a varying rate which initially exceeds the speech
4 encoding rate, the varying rate gradually being decreased to approximately the
5 speech encoding rate.

1 4. The method of claim 1 wherein processing includes processing the
2 decoded speech packets with a dynamic time warping process to generate speech
3 signals representative of the initial portion of speech packets, the speech signals
4 spanning a shorter time duration than the initial portion of speech packets and
5 having substantially preserved pitch attributes of the initial portion of speech
6 packets.

1 5. The method of claim 1 wherein the decoding is performed at
2 approximately the transmission rate.

1 6. The method of claim 1 wherein the initial portion of speech packets is
2 buffered for the channel reallocation delay until a channel through an access
3 medium is granted, and wherein the initial portion of speech packets is sent in
4 response to the channel being granted, the channel having a channel bandwidth
5 exceeding the speech encoding rate.

1 7. The method of claim 6 wherein the channel bandwidth is approximately
2 proportional to an inverse of the channel reallocation delay.

1 8. The method of claim 1 wherein the speech packets are received through
2 an access medium that includes at least one of a wireless communication medium,
3 a fiber optical medium, and a conductive wired medium.

1 9. The method of claim 8 wherein when the access medium is a fiber
2 optical medium, at least one of wavelength-division multiplexing, frequency-
3 division multiplexing and time-division multiplexing is employed.

1 10. The method of claim 8 wherein when the access medium is a wireless
2 communication medium, at least one of spread-spectrum multiplexing, frequency-
3 division multiplexing and time-division multiplexing is employed.

1 11. A communication device comprising:
2 a voice decoder to decode speech packets, at least an initial portion of the
3 speech packets being delayed by a channel reallocation delay;
4 a buffer to store the decoded speech packets; and
5 a processing element to process the decoded speech packets at a rate
6 exceeding a speech encoding rate and to generate speech signals representative of
7 the initial portion of the speech packets, the speech signals having a shortened
8 time period which compensates at least in part for the channel reallocation delay.

1 12. The communication device of claim 11 wherein the communication
2 device receives the initial portion of the speech packets at a rate exceeding the

3 speech encoding rate, and the voice decoder decodes the initial portion of the
4 speech packets at a rate exceeding the speech encoding rate.

1 13. The communication device of claim 11 wherein the initial portion of
2 the speech packets are buffered for a time approximating the channel reallocation
3 delay prior to transmission through an access medium, wherein the channel
4 reallocation delay includes time to grant a channel through the access medium.

1 14. The communication device of claim 11 wherein the processing
2 element processes the decoded speech packets at a processing rate which initially
3 exceeds the speech encoding rate and which is gradually decreased to
4 approximately the speech encoding rate.

1 15. The communication device of claim 11 wherein the processing
2 element retrieves the decoded speech packets from the buffer at a rate which
3 initially exceeds the speech encoding rate and which is gradually decreased to
4 approximately the speech encoding rate.

1 16. The communication device of claim 11 wherein processing element
2 processes the decoded speech packets with a dynamic time warping process to
3 generate speech signals representative of the initial portion of the speech packets,
4 the speech signals spanning a shorter time duration than the initial portion of the
5 speech packets and having substantially preserved pitch attributes of the initial
6 portion of the speech packets.

1 17. The communication device of claim 11 wherein the communication
2 device receives the initial portion of the speech packets at a transmission rate and
3 the voice decoder performs the decoding at approximately the transmission rate.

1 18. The communication device of claim 11 wherein the speech packets are
2 received through a channel granted through an access medium, the access channel
3 having a bandwidth exceeding the speech encoding rate.

1 19. The communication device of claim 18 wherein the bandwidth of the
2 access channel is approximately proportional to an inverse of the channel
3 reallocation delay.

1 20. The communication device of claim 11 wherein the speech packets are
2 received through an access medium that includes at least one of a wireless
3 communication medium, a fiber optical medium, and a conductive wired medium.

1 21. The communication device of claim 20 wherein when the access
2 medium is a fiber optical medium, the communication device includes a
3 demultiplexer to demultiplex received speech packets that are at least one of
4 wavelength multiplexed, frequency division multiplexed and time division
5 multiplexed.

1 22. The communication device of claim 20 wherein when the access
2 medium is a wireless communication medium, the communication device is a
3 wireless communication device having a receiver to receive the speech packets
4 that are at least one of spread spectrum multiplexed, frequency division
5 multiplexed and time division multiplexed.

1 23. A system communicating voice comprising:
2 a voice decoder to decode speech packets, at least an initial portion of the
3 speech packets being delayed by a channel reallocation delay;
4 a buffer to store the decoded speech packets; and
5 a processing element to process the decoded speech packets at a rate
6 exceeding a speech encoding rate to generate speech signals representative of at
7 least the initial portion of the speech packets, the speech signals having a
8 shortened time period which compensates for the channel reallocation delay.

1 24. The system of claim 23 further comprising:
2 a voice encoder to encode outbound speech packets; and
3 an output buffer to store outbound speech packets until a channel is
4 reallocated for the transmission of the outbound speech packets.

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1 25. The system of claim 24 further comprising a media access controller to
2 receive inbound speech packets from an access medium, to transfer outbound
3 speech packets to the access medium and to request allocation of an access
4 channel for transmission of the outbound speech packets through the access
5 medium.

1 26. The system of claim 25 wherein the voice encoder encodes the
2 outbound speech packets at the speech encoding rate and wherein the media
3 access controller sends the outbound speech packets through the access medium at
4 a rate exceeding the speech encoding rate, and wherein the processing element
5 processes the decoded inbound speech packets at a rate which initially exceeds the
6 speech encoding rate and which is gradually decreased to approximately the
7 speech encoding rate.

1 27. The system of claim 26 wherein processing element processes the
2 decoded inbound speech packets with a dynamic time warping process to generate
3 speech signals representative of the initial portion of the inbound speech packets,
4 the speech signals spanning a shorter time duration than the initial portion of the
5 inbound speech packets and having substantially preserved pitch attributes of the
6 initial portion of the inbound speech packets.

1 28. The system of claim 27 wherein the voice decoder, buffer, processing
2 element, voice encoder, output buffer and media access controller are part of a
3 two-way wireless communication device.